

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) A self-cooling ~~beverage~~-package device having:
 - a first cavity ~~(10)~~-containing a ~~beverage-product~~ for consumption,
 - a second cavity ~~(20)~~-forming a heat exchanger and containing a refrigerant liquid and its vapour,
 - a third cavity ~~(30)~~having an outside wall and containing adsorbent ~~(31)~~ for pumping of said vapour, and
 - means ~~(50)~~ for putting said second cavity into communication with said third cavity for operation of the device,
 - wherein characterised in that the third cavity ~~(30)~~ is provided with an external thermal insulation layer ~~(35)~~ providing a physiological protection against burns and designed such that the heat flow from the adsorbent ~~(31)~~ through the outside wall of the third cavity and through the external insulation layer is larger or equal to the heat flow from the adsorbent towards the second ~~(20)~~ and first ~~(10)~~ cavities during operation of the device.
2. (*Currently Amended*) A self-cooling ~~beverage~~-package according to Claim 1, wherein ~~characterised in that~~ the temperature of the external surface of the insulation layer ~~(35)~~ rises to more than ~~than~~ 70°C during operation of the device.

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3. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) has a thermal conductance less than or equal to $500 \text{ W.m}^2.\text{K}^{-1}$.

4. (*Currently Amended*) A self-cooling ~~beverage~~ package according to Claim 3, wherein ~~characterised in that~~ the thermal conductance of the insulating layer is between 20 and 60 $\text{W.m}^2.\text{K}^{-1}$.

5. (*Currently Amended*) A self-cooling ~~beverage~~ package according claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) has a thickness between 0.5 and 1.5 mm.

6. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) has a variable thickness.

7. (*Currently Amended*) A self-cooling ~~beverage~~ package according to Claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) includes a material melting at a temperature between 40°C and 80°C.

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8. (*Currently Amended*) A self-cooling ~~beverage~~ package according to Claim 7, wherein ~~characterised in that~~ the thermal insulation layer comprises ~~consists of~~ at least two layers, one of them including the melting material.

9. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 7, wherein ~~characterised in that~~ the thermal insulation layer (35) has a thickness between 3 and 10 mm.

10. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) surrounds the third cavity (30) consisting of a metal container.

11. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) extends around the first cavity ~~(10)~~.

12. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 1, wherein ~~characterised in that~~ the thermal insulation layer (35) has a thermochromic label ~~(36)~~.

13. (*Currently Amended*) A self-cooling ~~beverage~~ package according to Claim 12, wherein ~~characterised in that~~ the thermochromic label (36) is disposed opposite the third cavity ~~(30)~~.

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14. (*Currently Amended*) A self-cooling ~~beverage~~ package according to Claim 12, ~~wherein characterised in that~~ the thermochromic label (36) is disposed opposite the first cavity (10).

15. (*Currently Amended*) A self-cooling ~~beverage~~ package according to claim 1, wherein ~~characterised in that~~ the thermal insulation layer comprises (35) ~~consists of~~ cardboard and/or paper and/or plastic.

16. (*New*) A method for cooling the content of a package, comprising the steps of:
providing a package having a first cavity containing a product to be refrigerated, a second cavity forming a heat exchanger and containing a refrigerant liquid and its vapour, and a third cavity having an outside wall and containing adsorbent, said third cavity being provided with an external thermal insulation layer;

putting into communication said third cavity with said second cavity;
cooling down the product within said first cavity by pumping vapour of said refrigerant liquid by said adsorbent;

avoiding heating back of cooled product within said first cavity by allowing the heat flow from the adsorbent through the outside wall of the third cavity and through the external thermal insulation layer to be larger or equal to the heat flow from the adsorbent towards the second and first cavities; and

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avoiding excessive external temperature of the third cavity containing the adsorbent by
allowing a thermal gradient across the insulation layer ranging from 20°C to 50°C.